

REMARKS

Claims 76, 81, 97 and 98 are pending in the application.

Claim 81 stands objected to under 37 CFR § 1.75(c) as being of improper dependent form for failing to further limit the subject matter of the previous claim. The Examiner indicates that the recitation "comprises silicon carbide" does not further limit the subject matter of independent claim 76 which recites sidewall material consisting essentially of silicon, oxygen and from about 2% to about 20% carbon, by weight. Applicant respectfully disagrees. A material which consists essentially of silicon, oxygen and carbon where at least some of the silicon and carbon are present in the form of silicon carbide can properly be recited as a material which consists essentially of silicon, oxygen and carbon and which comprises silicon carbide. This recited aspect of the invention is further supported by the specification at page 14, lines 12-17 which indicates that incorporated carbon in silicon oxide materials can be in the form of silicon carbide. Accordingly, the recitation of silicon carbide further limits the scope of the material consisting essentially of silicon, carbon and oxygen. The objection to claim 81 is therefore improper and applicant respectfully requests withdrawal of such objection in the Examiner's next action.

Claims 76, 81, 97 and 98 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant's admitted prior art (AAPA) as combined with McAnally, U.S. Patent No. 6,136,700 and Yau, U.S. Patent No. 6,054,379. As set forth in MPEP § 2143, a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest

all of the claim limitations. In order to establish a *prima facie* case of obviousness, the burden of which is upon the Examiner (MPEP § 2142), each of these three factors must be shown. Each of claims 76, 81 and 97-98 are allowable over the cited combination of AAPA, McAnally and Yau for at least the reason that the references, individually or as combined, fail to disclose or suggest each and every limitation in any of those claims and fail to provide a basis for a reasonable expectation of success for achieving the invention claimed when the claims are properly considered as a whole. Accordingly, a *prima facie* case of obviousness has not been established.

Independent claim 76 recites a DRAM construction comprising a pair of wordlines having sidewall edges and carbon-containing sidewall spacers extending along the sidewall edges of the wordlines, the carbon-containing sidewall spacers consisting essentially of silicon, oxygen, and from about 2% to about 20% carbon, by weight. Claim 76 further recites an insulative layer in contact with at least one of the carbon-comprising sidewall spacers and a first storage node, second storage node and bit line contact in physical contact with one or more of the carbon-containing sidewall spacers. As acknowledged by the Examiner at page 4 of the present Action, AAPA does not disclose or suggest sidewall spacer material comprising carbon or the recited insulating layer being in contact with a carbon-containing sidewall spacer. Further, AAPA does not disclose or suggest the recited first storage node, second storage node and bit line contact each being in physical contact with one or more carbon-containing sidewall spacers.

McAnally discloses a single self-aligned contact 122 between wordlines having sidewall spacers 108 (Fig. 3 and col. 6, ll. 25-33). McAnally further discloses that carbon can be incorporated into sidewall spacers 108 by implantation subsequent to deposition to

form resulting carbon-rich oxide or carbon-rich nitride with the term "carbon-rich" defined as possessing "some carbon" (col. 5, ll. 16-18; col. 6, ll. 34-37). The disclosure by McAnally of materials comprising "some carbon" does not disclose or suggest the claim 76 recited sidewall spacers consisting essentially of silicon, oxygen and from about 2% to about 20% carbon, by weight. Further, the disclosure of implanting "some carbon" does not suggest methods for achieving the claim 76 recited sidewall spacers consisting essentially of silicon, oxygen and from about 2% to about 20% carbon, by weight. Additionally, the McAnally disclosure of a single contact structure does not disclose or suggest each of a bit line contact, a second storage node and a first storage node being in physical contact with one or more of the carbon-containing sidewall spacers.

Yau discloses utilization of oxidized organo-silane layers. Yau further discloses that the carbon content of such films can be from 1-50%, by weight (col. 4, ll. 54-59). Yau additionally indicates that the carbon is preferably included in an alkyl group such as methyl or ethyl (col. 4, ll. 41-44). Nowhere does Yau indicate or suggest utilization of materials other than hydrogen-containing materials. Accordingly, Yau does not disclose or suggest the recited carbon containing sidewall spacers consisting essentially of silicon, oxygen and carbon. As combined with AAPA and McAnally, Yau does not contribute toward suggesting the claim 76 recited carbon-containing sidewall spacers consisting essentially of silicon, oxygen and from about 2% to about 20% carbon, by weight. Nor does Yau contribute toward suggesting the claim 76 recited insulative layer, first and second storage nodes and bit line contacts being in physical contact with one or more carbon-containing sidewall spacers which consists essentially of silicon, oxygen and from about 2% to about 20% carbon, by weight. Accordingly, independent claim 76 is not

rendered obvious by the cited combination of AAPA, McAnally and Yau and is allowable over these references.

Dependent claims 81, 97 and 98 are allowable over the cited combination of AAPA, McAnally and Yau for at least the reason that they depend from allowable base claim 76.

For the reasons discussed above, claims 76, 81, 97 and 98 are allowable. Accordingly, applicant respectfully requests formal allowance of pending claims 76, 81, 97 and 98 in the Examiner's next action.

Respectfully submitted,

Dated:

January 16, 2004

By:

Jennifer J. Taylor
Jennifer J. Taylor
Reg. No. 48,711